

NAVITASMAX

ADVANCED THERMAL ENERGY STORAGE TECHNOLOGY

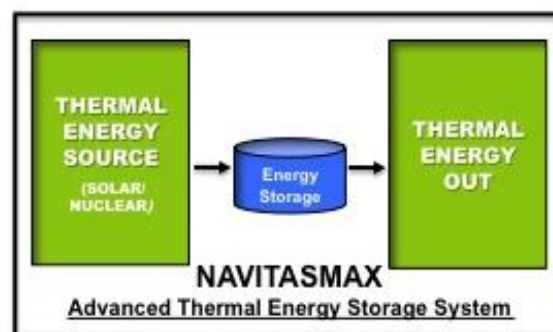
PROJECT TITLE:	Novel Tuning of Critical Fluctuations for Advanced Thermal Energy Storage		
ORGANIZATION:	NAVITASMAX	LOCATION:	Chandler, AZ
PROGRAM:	HEATS	ARPA-E AWARD:	\$812,328
TECH TOPIC:	Concentrated Solar & Nuclear Power	PROJECT TERM:	12/1/11 – 11/30/12
WEBSITE:	www.arpa-e.energy.gov/ProgramsProjects/HEATS.aspx		

CRITICAL NEED

There is a critical need to find efficient, cost-effective thermal energy storage solutions to maximize the use of domestic solar and nuclear energy resources. Most utility-scale solar power plants only run at about 25% of their capacity because they can't generate power at night—thermal energy storage makes it possible to increase this capacity to up to 60-75%. Similarly, nuclear power plants produce a constant output of power—thermal energy storage could help increase this output during times of critical peak demand.

PROJECT INNOVATION + ADVANTAGES

NAVITASMAX is developing a novel thermal energy storage solution. This innovative technology is based on tuning the properties of simple and complex fluids to increase their ability to store more heat. In solar thermal storage systems, heat can be stored in NAVITASMAX's system during the day and released at night—when the sun is not shining—to drive a turbine and produce electricity. In nuclear storage systems, heat can be stored in NAVITASMAX's system at night and released to produce electricity during daytime peak-demand hours.



IMPACT

If successful, NAVITASMAX would develop a thermal storage solution for solar and nuclear energy systems that are significantly more efficient and cost effective than existing thermal storage solutions.

- **SECURITY:** Cost-effective thermal energy storage would enable increased use of domestic energy resources like solar and nuclear—strengthening the nation's energy security.
- **ENVIRONMENT:** Cost-effective thermal energy power generation could help decrease fossil-fuel-based electricity use and harmful emissions from coal-burning power plants.
- **ECONOMY:** Thermal energy storage systems could make it less expensive to generate power from nuclear and renewable solar energy, which in turn could help stabilize electricity rates for consumers.
- **JOBS:** Widespread use of advanced energy storage technologies could create jobs in engineering, manufacturing, and construction to support the development of utility-scale solar and next-generation nuclear energy plants.

CONTACTS

ARPA-E Program Director:
Dr. Ravi Prasher,
ravi.prasher@hq.doe.gov

Project Contact:
Kelly Herbst,
kcherbst@msn.com

Partner Organizations:
Cornell University, Harvard University,
Nano Terra, Barber-Nichols